

- ☒ fossil energy
- ☐ environmental
- ☐ energy efficiency
- ☐ other

TOMORROW'S COAL REFINERY

States Impacted:

Alaska, Colorado, Montana,
North Dakota, South Dakota,
Texas, Wyoming

Benefit Areas:

Mining, Power and Related
Service Industries

Participants:

ENCOAL, SGI International,
regional coal companies and
power companies

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Description

The demonstration of the ENCOAL™ Liquids-From-Coal (LFC) process at a plant near Gillette, Wyoming, is the first step towards a new versatile "coal refinery" concept where coal is used to produce a variety of products. The process converts low-rank western coals into (1) a process-derived fuel — a low-sulfur clean coal product with a higher heating value than unprocessed coal, and (2) a coal-derived liquid — a low-sulfur liquid with properties similar to distillate fuel oil.

ENCOAL™ Corporation recently completed the permitting process for a full-scale LFC plant in Campbell County, Wyoming, a project 15 times larger than the Gillette demonstration. TEK-KOL, the company which owns and licenses the LFC process, is discussing options to license full-scale plants overseas. ENCOAL™ also has completed feasibility studies on coals from China, Russia, and Indonesia and will begin similar studies with other countries in 1999.

Goals

The goal is to demonstrate that the ENCOAL™ LFC process can be a major building block in constructing a coal refinery, in combination with a power plant such as integrated gasification combined-cycle, circulating fluidized-bed combustion, or pressurized fluidized-bed combustion.

Tangible Benefits

National: A "coal refinery" is versatile. The capability of producing electric power, as well as other fuels and chemicals, makes the coal refinery a one-stop shop where all parts of the raw product are usable and a suite of products is produced. The more that can be derived from a single feedstock, the fewer production and disposal issues to be dealt with. Designers envision ENCOAL™ plants being integrated with some type of power plant to efficiently use the energy in the off-gases, as well as the waste fine coals. The two by-products, off-gases and waste fine coals, will provide all the internal energy required to operate the plant, and excess power is exported to the grid. ENCOAL™ plants would ship a suite of liquids for use as transportation fuels, heating and power generation fuels, and industrial products for iron production or road construction (paving) industries and or chemicals.

Regional: Future commercial plants will positively impact the economic health of the coal producing regions of our Western states by ensuring the long-term viability of the mining and related service industries.

Local: Future coal refineries will add more than 500 construction jobs (short-term) and approximately 100 full-time jobs per plant.